



JUANG LIVELIHOOD AND FOOD INSECURITY ISSUES: AN ANTHROPOLOGICAL ANALYSIS AND THE WAY FORWARD

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ABSTRACT

The issue of food insecurity has remained as a major concern for several tribal households in Odisha who mostly depend on collection of Minor Forest Produces and agriculture as their livelihood sources. It has been a major challenge for the government and administration of the states like Odisha where quite a significant number of populations are estimated to be absolutely poor and they suffer from food insecurity and malnutrition. Agriculture and collection of forest produces are still found to be one of the important contributors to the state economy whereas changes in climate and weather conditions as well as occurrences of calamities like, insufficient rain fall, flood, drought and cyclone have affected negatively the food production in the state to a great extent. This has been one of the reasons that gave Odisha an unwanted status of the second poorest state in India. The present paper discusses this issue of Food Insecurity and Livelihood problem by taking the case study of Juang tribe of Odisha. It also focuses on the loopholes that are prevalent within the Government sponsored schemes and programmes because of which the food insecurity issues and livelihood-related problems have not been resolved from several years.

KEYWORDS: Food Insecurity, Livelihood, Sustainable Development, Tribe, Accessibility

INTRODUCTION

Food security in general terms is understood as mandatory food accessibility of households and individuals which are nutritionally suitable and available all time. This should be compulsorily procured with a sustainable way in conformity with human aspirations and dignity. No doubt it is a necessary requirement for the welfare and development of human beings and it should be ensured by every country. From several years, food security has been considered as a major concern due to the rise of population and steady increase of demand for food. Additionally, it has also been found out that income inequality have made disruptions in the food availabilities. The problem of food insecurity is quite rampant in Odisha and it is also existent among the Juang tribes inhabiting in Odisha. From many years, the Juangs have suffered from food insecurity and due to that malnutrition-caused mortalities have also been recorded. For instance, 19 Juang children of Nagada village of Jaipur district have died due to malnutrition and starvation in 2016¹. Thus the Juangs are well-known for their vulnerabilities related to food insecurity since long time. The present research paper engages with this issue and tries to understand the food insecurity issue and its relationship with livelihood. The food security concept is not a simple one and it has dynamic and relational connotations. In general terms, it refers to people's ability to access the food and nutrition as well as it also looks for a condition of sufficient food availability. Supplementing to this, the ability to buy food only can't ensure food security until and unless there is suitable supply of food production. Thus the government of every country should be conscious enough to see the sufficient food production and availability as well as

people's ability to purchase it, and then only the food security situation can be guaranteed. This also implies to take initiatives for the growth of employment opportunities in the country. The notion of food security also reflects towards proposing policies and programmes of supplementing food and nutritional elements for the targeted population of poor, helpless, old-aged and differently-abled people.

During the period of mid-1970s, the notion of 'food security' grabbed the world's attention due to crisis of food items in the entire globe (FAO, 2003). At the outset, the concept of food security was interpreted through the supply of food and its availability. At that time, the fixation of price stability and ensuring food availability for all were main focus. This led to the basic notion of defining food security as all time availability of food supplies in the world which as put forward by the World Food Summit held in 1974. Apart from this, Amartya Sen, the most noted Economist has supplemented that not only the agricultural production or food availability but also the social structure and economic conditions of people in a country determine food security (Sen 1981). Thus the latest definition of food security is found to be quite dynamic and multi-dimensional. It gets transcended from physical availability or economic subjects and it includes socio-cultural, nutritional and health aspects. These aspects were taken into consideration by The World Food Summit of 1996 and it proposed a modified definition of 'Food Security'. It states "food security, at the individual, household, national, regional, and global levels is achieved when all people, at all times, have physical and economic access to sufficient, safe and nutritious

food to meet their dietary needs and food preferences for an active and healthy life". The FAO further revised and reworked in this definition in 2001 and stressed on social aspects of food security as well as emphasized on the basic food requirements for a human being to maintain a nutritionally suitable and healthy life. Thus food security is a multi-dimensional term that take into consideration several elements such as, food production, availability, purchasing power of people, domestic consumption or requirement as well as export-import activities of the country. Apart from this, it has also been found that the food security has been linked with the livelihood pattern of people. So, in the following section, the researcher has discussed about the concept of livelihood.

Argument

The present research paper engages with the food insecurity issues and tries to understand and describe the interpretation of Juang tribe towards it by linking its relationship with Juang livelihood. The Juangs are the original inhabitants of Keonjhar district and they are being enlisted as one of Particularly Vulnerable Tribal Groups (PVTGs) of Odisha because of their small size of population, economic backwardness and low-level use of technology. Since past, the Juangs are suffering from low productivity, seasonal food insecurity, malnutrition and health related issues. The present paper discusses the problem of food and livelihood insecurity among Juangs by linking it with their economic condition and argues that improvement of livelihood system can definitely improve the food security situation of the Juangs.

'Livelihood' in common man's notion refers to a 'means of living'. In other words, it is the way through which a person ensures its survivability. To understand it in a descriptive way, it can be defined as resources and assets as well as the capabilities or activities that are required for maintenance of life (Chambers & Conway, 1991). It also indirectly refers to the purchasing power or ability of individuals for daily basis consumption of sufficient foods. It reflects to the situation of amidst poverty and low-level economic condition of people. As illustrated by USAID (1992), "food security is that condition when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life".

The linkage between food security and livelihoods is a direct one and it is influenced by several factors. For instance, the age-old practice of traditional occupation of many tribal people is presently found to be quite low yielding and high dependence on this occupation may lead to poverty situation and starvation. Talking about the 'livelihood systems' of people, it can be understood as the skill, practice, capability or activity of people that makes their living. In other words, it is the source through which people get their basic consumption requirement of food and through this they maintain or sustain their family life. In some notion, the livelihood is also interpreted as a continuity or regular flow of income that helps to manage the individual and family needs. Thus, the livelihood system and security can be determined as a primary contributing factor to ensure food security among people.

As illustrated by the kaekara (2015) livelihoods are those means, assets, resources or entitlements through which human beings find their sources of living. Sometimes the natural resources or assets such as, water, land, forest becomes source of livelihood for some people as they collect and produce food items from these resources, and sometimes the institutes or social networks like, school, factory, college, service centers also become sources of livelihood for some people.

In social sciences, the livelihood connotation goes beyond the economic assets and covers socio-cultural aspects and means. For example, the family co-operatives, traditional knowledge, family or lineage-based occupation, social relationships and cultural aspects. This may also involve information, cultural knowledge, social networks and legal rights as well as tools, land and other physical resources" (Blaikie P., Cannon T., Davis I., Wisner B. 2004).

To supplement the above point, the Department for International Development (DFID), has given the concept of Sustainable Livelihoods Framework (SLF) to understand how people maintain their life (DFID 2010). This framework was a result of research works done by several academicians and practitioners and it is represented as an analysis tool to understand the livelihood condition of people as well as to analyze the factors that are responsible for determining people's livelihood. This framework is composed of three basic elements of the livelihood which are, capabilities and resources of livelihood, activities done to ensure livelihood and the outcomes achieved from this performance which helps to fulfill people's needs.

So far as the various livelihood activities of the tribal people of Odisha is concerned, they mostly depend on agricultural cultivation, wage labor (farm and non-farm labor), collection of minor forest produces, hunting, fishing, animal husbandry, liquor brewing and selling. These activities result into getting foods and other products that are required to maintain a household economy such as, fruits, vegetables, grains, meats, fuel wood and leaf plates. The produces they receive that are in the form of food items, grains and vegetables directly fulfill the household nutritional needs whereas the non-food requirements are fulfilled by the cash income of people. In case of the insufficiency of these requirements the people suffer from food insecurity. The situation with the Juangs of Keonjhar is very much similar to this. Their livelihood mostly depends on the forest land and forest resources. When these resources get affected negatively due to the climatic fluctuation and environmental degradation, they suffer from the food insecurity problem. The narrations of field-based findings in the following sections give more insights about this.

Juangs' Notion on Food Insecurity

The notion of food security refers to compulsory accessibility of food by people and families which would be nutritionally adequate and must be available throughout the year in a dignified way. It is an important component of human welfare and development which must be safeguarded and sustained by the world, nations, districts, villages, households and individuals. From several years, the food security has been a major goal

as well as concern for many countries and it has motivated towards technological development and scientific research for more production and availability. It has also been found out that recently the purchasing power and capability of humans to get food has been doubled in comparison to past through rise of income and technological development. The issue of food security is quite problematic in case of Juangs of Odisha. From several decades, the Juangs have suffered from food insecurity and due to that malnutrition-caused mortalities have also been recorded. For instance, 19 Juang children of Nagada village of Jajpur district have died due to malnutrition and starvation in 2016². Thus, the Juangs are well-known for their vulnerabilities since long time.

Out of the total 234 respondents belonging to 50 Juang households that were interviewed by the researcher in the present study, 176 respondents mentioned that they suffer from food insufficiencies in certain months within a year. These months are basically from March to May of the year. The foods received from the, Public Distribution System (PDS) and Supplementary Food programmes of the government are found to be insufficient for the households. The detailed information about the sampled Juang respondents who have suffered from food insufficiencies in last year has been illustrated in the following table.

Months	Number of Juangs suffering from food insufficiency in the month	Percentage of Juangs suffering from food insufficiency in the month
January	3	1.70
February	5	2.84
March	17	9.65
April	21	11.93
May	34	19.31
June	27	15.34
July	25	14.20
August	12	6.81
September	14	7.95
October	18	10.22
November	16	9.09
December	2	1.13
Total	176	100

Table No 1: Number and percentage of Juangs suffering from food insufficiency in a year

As illustrated in the table, majority of the Juangs responded that during the months of March to July every year they face food insufficiency. The highest number (34) respondents mentioned that they found scarcity of food in the month of May. The second highest numbers of respondents, i.e., 27 mentioned that in the month of June, they also find difficulty in getting adequate foods for their survivability of family. Only during the winter season, especially during the months of December to March in a year, the respondents mentioned that they got sufficient foods for their sustainability. Very less number of respondents, such as, 2, 3, and 5 Juang individuals said that they face insufficient

food during the December, January and February months of the year respectively. These respondents are found to be elderly members and people suffering from health-related problems.

The reasons for this poor intake that being mentioned by the respondents were, unemployment or specifically seasonal unemployment, depleting natural and forest resources and decrease in the agricultural production. A majority of the respondents pointed out that the seasonal unemployment and low production of agriculture are the major reasons that cause food inadequacy for the families. In addition to this, many of the respondents also highlighted that the depleting natural resources especially the deforestation happening in recent years has also negatively affected the food availabilities and intake of the Juangs. The following table points out the major reasons that were cited by the respondents for their food scarcity or insufficiencies in certain months of a year.

Reasons	Numbers of Respondents	Percentage (%)
Seasonal Unemployment	29	16.47
Lack of saving or surplus income	32	18.18
Non-availability of forest products	60	34.09
Low production from agriculture	45	25.56
Illiteracy	10	5.68
Total	176	100

Table No 2: Reasons for not getting sufficient food by the Juangs

As mentioned in the Table No. 2, the highest number of respondents (34.09 %) mentioned that non-availabilities or decreasing amount of forest products as their main reason of food scarcity. Supplementing to that, almost 25.56 percentages of respondents pointed out the low yielding of agriculture as another major reason for insufficient food intake for the Juangs. Apart from this, the lack of saving or surplus has been mentioned as another reason of food insufficiency by 32 (18.18%) respondents. Similarly, the seasonal unemployment (16.47%) and Illiteracy (5.68%) are also cited as other reasons of food insufficiency by the respondents. The following diagrammatic presentation gives more illustration about this.

So far as the traditionally food practices of Juangs are considered, their food habits are similar to that of the non-tribal rural communities of Odisha except some of the typical and traditional forest food products, animal meat and wild fruits and tubers. The Juangs are omnivores and they are not found to be very particular towards certain food pattern. They used to consume all sorts of food according to their availability (Dalton 1872:152). They also eat meats of goats, hen, sheep and wild pigs, deer which they hunt from forest. The food pattern of the Juangs varies according to different seasons of the year as it depends on its availabilities. The Juangs also catch fish, prawns and crab during rainy seasons from the nearby water channels and consume them as food. They mostly depend on food grains

such as, millet, cereals, pulses, fruits and vegetables during the dry period or summer time. As in winter season, the harvest is done and various types of the vegetables are cultivated, the Juangs eat rice, millet, vegetables and fruits. During the festivals and special occasions, the Juangs mostly eat non-vegetarian food items. Additionally, they also consume country liquor (*haandia* in local terms), *mahuli*, one kind of wine made of a flower called as 'mahula' and palm wine (*salap rasa*) as drinks which can also be considered as food substances.

The most common food found among most of the Juang households is boiled rice, in Juangi language that is referred as *tano*. Rice is considered to be the superior one among all other types of foods among Juangs. Rice along with boiled or fried vegetables, salt and chilli is the most preferable dish for many Juangs. Juangs don't have any differences among them in terms of consuming food. All the Juangs, irrespective of their social position, hierarchy or gender eat the similar foods. They eat pulses, cereals, vegetables, mushrooms and spinaches during harvest season and non-vegetarian food items on the festival occasion.

For keeping seeds to cultivate in coming years, the Juang keeps the unhusked rice and they store it quite systematically. Traditionally, the Juangs used to store the seeds in a hand-made container made up of straw rope. This is preserved in the Juang house and used only during the beginning of rainy season (Mc. Douglas, 1963:14).

Food Production and Food Availability among the Juangs

Collection of Minor Forest Produces and cultivation of forest land are main occupations of Juang households in Odisha. The land for Juangs is an important source of economy in which they practice both settled cultivation and shifting cultivation. Apart from the forest-based hilly land, they also cultivate in low land areas, such as, stream line land and valley lands. In fact, the Juangs select their cultivable land according to their preferences or choice of food grains and products. For example, paddy, cereals, mustard and pulses are cultivated in low land areas whereas millets and turmeric are cultivated in hilly lands. In earlier days, the Juangs were undertaking shifting cultivation in which they were burning the small trees and bushes of a small patch of land and cultivating in that by utilizing the ashes as fertilizers. After that they leave the land for at least for five years and select another patch of land for cultivation. In the present day, the practice of shifting cultivation among Juangs is found to be quite rare. The following table gives an illustration about the types of food grains or cereals produced by the Juangs in a year.

Types of food produced in a year		Quantity (in quintals)	Quantity of demand of food (in quintals)
Kharif	Paddy	20	30
	Maize	14	20
	Arhar (cereals)	13	20
	Niger	10	15
	Ragi/ Millet	11	20

Rabi	Summer paddy	17	25
	Ground Nut	8	10
	Mustard	6	10

Table No 3: The production of types of foods by the Juangs in a year

The above table reflects the amount of production of food items combining the total production of the selected 50 Juang households received in a year. This is the information of food items that are produced in 2022 by the Juangs. It shows the quantity of food produced is found to be quite less than the quantity of food demanded by the Juangs. The food production doesn't meet the required food demand of the sampled Juang people. That's why the Juangs depend on the PDS and supplementary foods given by the Govt. to meet their requirements. That too becomes insufficient in most of the times.

After the food production or availability, the findings of food accessibility need to be discussed here to understand the issue of food insecurity of the Juangs.

Food Accessibility

In this section of the paper, the researcher attempts to make a detailed review of the nutritional intakes found among the Juangs including protein, calcium, vitamins, energy and fat and to highlight the insufficiencies found among the Juangs in comparison to other communities. This section of the paper also discusses the economic aspects such as expenditure of households, rise of price level, distribution of subsidized food items by Govt. among the Juangs of Keonjhar. 2,400 Kilo Calories per-capita per day in rural areas and 2,100 Kilo calories per capita per day in urban areas consumption expenditure is considered as a basis of poverty lines by the Prof. Lakdawala Expert Group. The C. Rangrajan Expert Group emphasized on three basic nutrients that are highly required to understand the food intake condition and poverty line estimation among the people. The nutrients are: energy, protein and fat and according to the group, 48 gms of protein and 28 gms of fat per capita per day in rural areas whereas 50 gms of protein and 26 gms of fat per capita per day in urban areas should be minimum calorie intake norm to determine food security. As India witnesses a high incidences of poverty the per-capita calorie intake is found to be quite low. This is even worse in case of indigenous communities of the country, just like the Juangs of Odisha. The per-capita intake per day in India is highlighted in the following table. The figures here illustrate the per-capita supply of calories (Kcal), proteins (gms), fat (gms.) per day and sugar, vegetables and fruits (kg per year). The requirement of per-capita calories per day in India is 2455 which is quite low in comparison to the world average of 3000 calories intake per person per day. Similarly, in consumption of fat, protein, sugar, vegetables and fruits, the amount is very low than the world average. Further, the problem is more intense when we take into account of regional and community disparities of tribal-rural-urban and tribal and village communities.

The researcher collected information about the calorie intake

of several food products consumed by the sampled Juang respondents. The basic food items such as, rice, potato, vegetables, pulses, oil and fruits are taken for the analysis and their calorie intakes were measured to find out the differences between the intakes of Juangs and national average. It shows a big gap and the Juangs remain in very low position in comparison to the calorie intakes of national average.

The majority of the food items, the intake of Juangs remain far below than the national per person per day intakes. Except the intakes of vegetables, pulses and oil, the Juangs have left far behind than the per day calorie intake of national average. In rice too, which is the staple food item of Juangs, they lack sufficient intake than the required national average food intake. As mentioned in the table, there is a big difference between per person food intake of the Juangs and the required intake for proper nutrition and food security.

Consequences of Food Insecurity

The above findings justify that the Juangs of Keonjhar suffer from severe food insecurity in terms of not having sufficient food intakes. Consequently, it leads to several other difficulties for the Juangs, such as, malnutrition and starvation induced deaths of children, diseases and weakness for the elderly members. The rise of diseases and mortalities by eating non-food items to satisfy the hunger are also some other major consequences that appears among Juangs due to food insecurity. Additionally, other supplementary problems such as, maternal mortality, migration, theft, crimes, conflict and violence also happens due to this root problem of food insecurity. Among the Juangs in the Kundhei village of Keonjhar, it was found out that there are basically two ways of dealing with hunger such as, consumption of inferior food items (tubers, fibers, fruits and insects), and borrowing from non-tribal neighbors. Additionally, there is also a strategy of migrating from one place to another where opportunities of food and employment are found. Migration to urban areas enables the people to tide over the lean months and earn just enough for their subsistence. In Kundhei village also, people migrate temporarily to get income and maintain their sustainabilities. One important thing to point out here is that the food insecurity is so severe that a single strategy fails to solve the problem, so much so that the Juang families have to resort to a combination of strategies. In the Kundhei village, it was found out that altogether 176 respondents of 50 households rely on all these strategies (separately or combined) to cope with hunger and food insufficiencies. The following table gives illustration of the coping strategies being adopted by the Juangs to deals with hunger and food insecurity.

Concluding Remarks and the Way Forward

The linkage between livelihoods and food security is quite definite and direct. The production of food items is the primary activity of human beings which includes his/her capability, skill, quality and determination which in turn ensures his/her income or livelihood. The assurance of full time livelihood opportunity will definitely guarantee for the food security for individuals and instability in it may lead to lack of sufficient food. Studies in past have proven that the primary cause of food insecurity has been found to be the problem of livelihood which

ultimately leads to seasonal unemployment, low productivity and starvation or hunger.

The present research work among Juang has also found out that the food insecurity being faced by the Juangs is directly linked with their livelihood insecurity. Being agriculturists, the Juangs of Kundhei village suffer from several livelihood related problems and that in return affects their food and nutrition requirement. Less land-holding, decreasing fertility of the land and low productivity are the underlined problems in agriculture which affects the livelihood of the Juangs. The study found out the livelihood insecurity problems of Juangs which are listed below.

- The landholdings of Juangs are found to be quite small and insufficient. To make the Juang livelihood self-sufficient, the holdings of land among the Juang must be properly distributed and land as a major source of livelihood for the Juangs must be protected.
- Increase in population is also another important factor that has been observed during the research. Due to this, the demand for food has been increased and it has become scarce. So one recommendation would be to reduce the family size and make a family planning looking at the limited resources.
- The depletion of natural resources like deforestation and loss of soil fertility also impacts negatively to the production of foods. So special care should be taken to protect and preserve natural resources upon which the Juang livelihood and food security is highly dependent.
- Additionally, the disaster resistant millet cultivation should be done more by the Juangs to ensure an alternative livelihood so that it can compensate the periodical loss of rice cultivation.

While interviewing the Juangs, the researcher found out the above reasons that come across as hurdles for a sustainable livelihood of the Juangs. Most of them agreed that the agriculture which is the main source of their livelihood is getting affected negatively due to land diversification and low productivity which in return make obstacles to achieve food security.

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